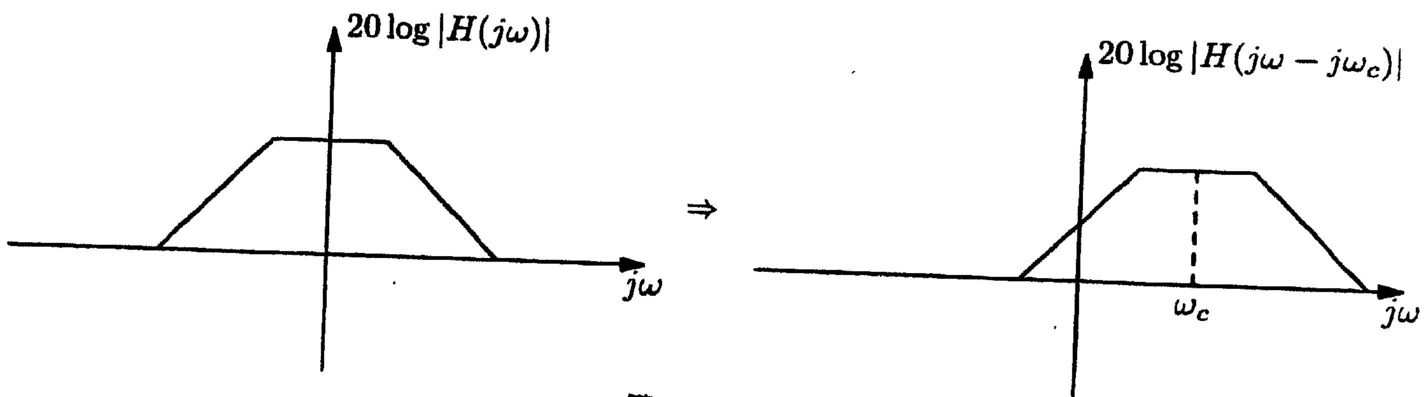

$20\log|H(j\omega)|$
$j\omega$
$\Rightarrow$
$20\log|H(j\omega - j\omega_c)|$
ω_c
$j\omega$

Figure 1

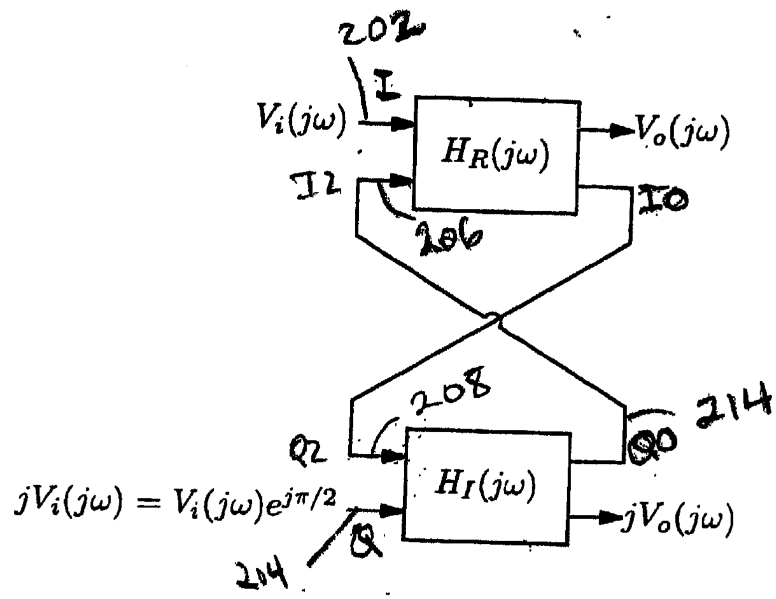

202
I
$V_i(j\omega)$
$H_R(j\omega)$
$V_o(j\omega)$
I2
206
IO
208
214
Q2
QO
$H_I(j\omega)$
$jV_i(j\omega) = V_i(j\omega)e^{j\pi/2}$
$jV_o(j\omega)$
Q
214

FIGURE 2

300

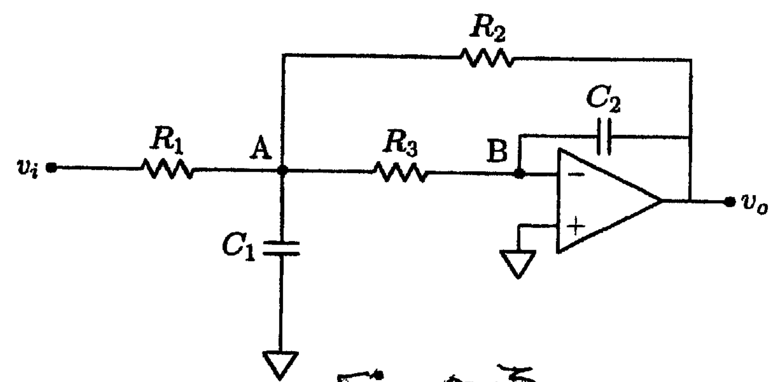


FIGURE 3

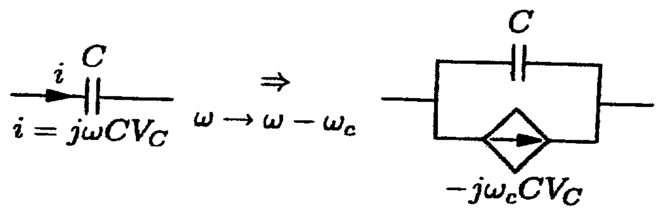

i
C
$i = j\omega C V_C$
$\Rightarrow$
$\omega \rightarrow \omega - \omega_c$
C
$-j\omega_c C V_C$

FIGURE 4

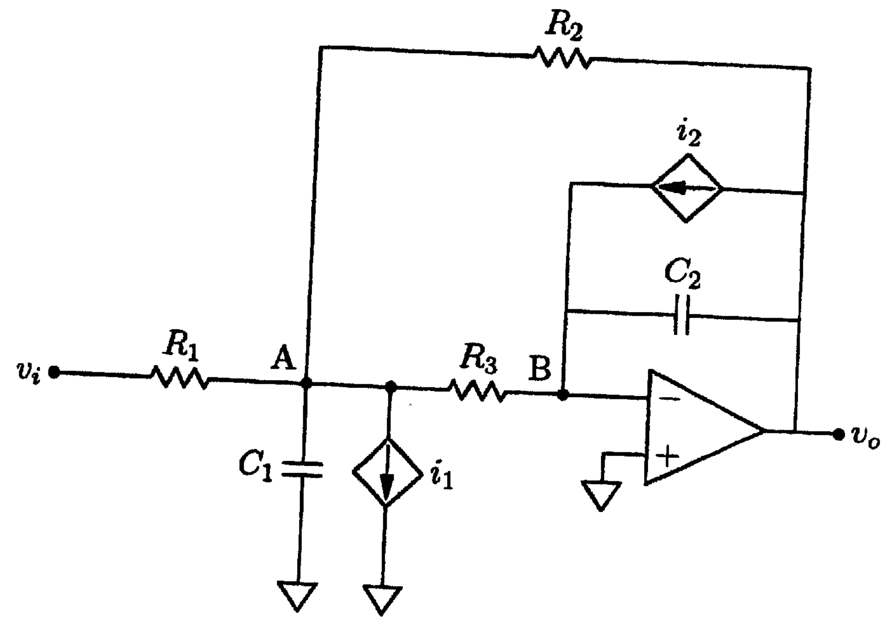


FIGURE 5

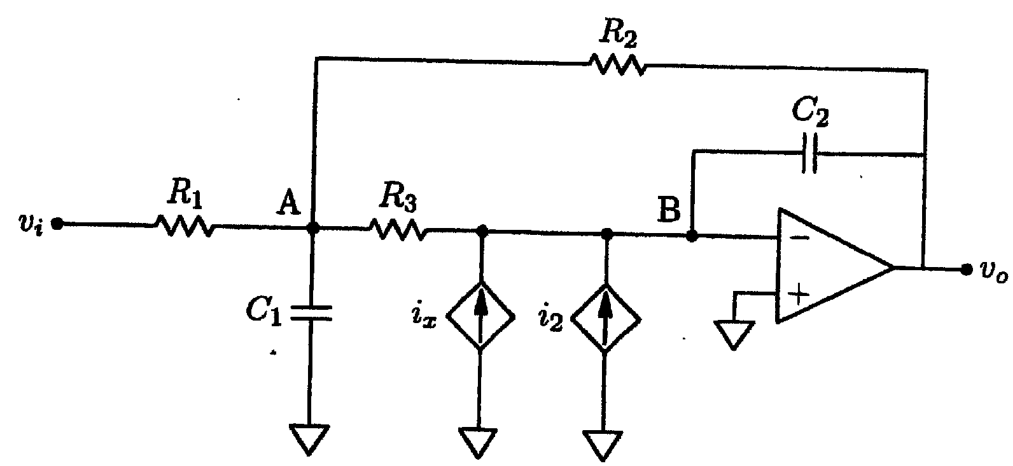


Figure 6:

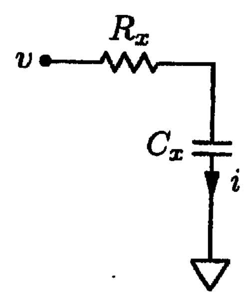


Figure 7:

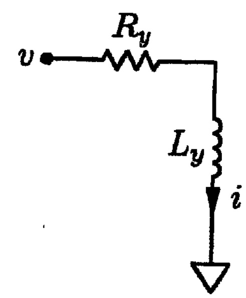


Figure 8:

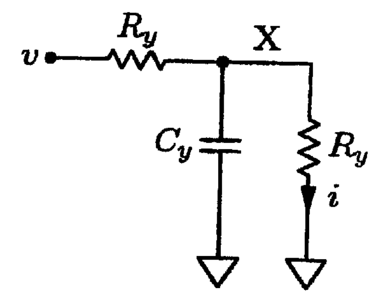
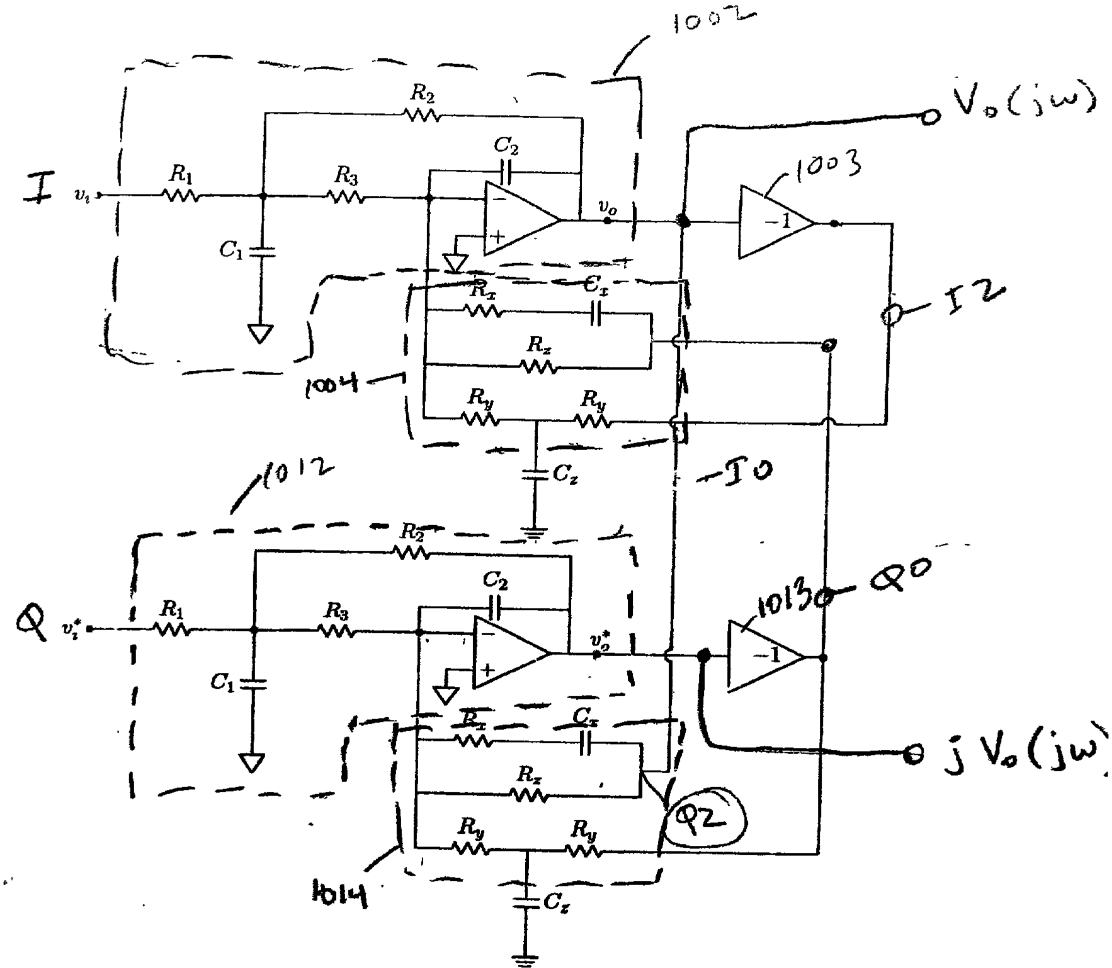


FIGURE 9



$$
\begin{aligned}
H_0 &= -\frac{R_2}{R_1} & R_y &= \frac{1}{2\omega_c^2 C_2}\frac{\omega_0}{Q} & R_x &= \frac{1}{\omega_c C_2}\\
\omega_0^2 &= \frac{1}{C_1C_2R_2R_3} & C_y &= \frac{2}{R_y}\frac{1}{\frac{\omega_0}{Q}} & C_x &= \frac{1}{R_x\frac{\omega_0}{Q}}\\
\frac{\omega_0}{Q} &= \frac{1}{C_1}\left(\frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_3}\right) & &= 4\omega_c^2 C_2\left(\frac{\omega_0}{Q}\right)^2 & &= \frac{\omega_c C_2}{\frac{\omega_0}{Q}}\\
& & & & R_z &= 1/\omega_c C_2
\end{aligned}
$$

Figure 10: